

英語常用字學習網站 (SWBLS) 對英語學習成就影響之分析

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摘要

本研究旨在探討、區辨影響非英語系國家的英語學習者，英語常用字能力的關鍵因素，以拼字能力、字詞辨識能力、字義理解能力三個因素分析，比較具高英語常用字能力與具低英語常用字能力學生的差異。研究採準實驗設計，以 96 位新北市國小五年級學生為研究對象，學生接受看與說英語教學法，並同時使用英語常用字網站輔助學習，共進行 16 週的教學實驗。研究結果顯示：具高英語常用字能力與具低英語常用字能力的學生，在拼字能力、字詞辨識能力、字義理解能力上皆有明顯差異。其中，拼字能力能預測具高英語常用字能力學生的英語閱讀能力；對於具低英語常用字能力的學生而言，字詞辨識能力能預測其英語閱讀能力。拼字能力、字詞辨識能力、字義理解能力皆為能區辨英語常用字能力的因素，但對於具高英語常用字能力與具低英語常用字能力的學生，則可能有不同的因素影響其學習，為了提升學生英語學習成效，對於不同英語常用字能力的學生給予適當的差異化教學確有其必要性。

關鍵字：拼字能力、字詞辨識能力、字義理解能力、英語常用字、英語常用字學習網站



1. Introduction

Proficient reading involves mastering the skills of decoding, identifying words and understanding text on the page with meaning. For the purpose of becoming a proficient reader, it is essential for English language learners to develop an extensive bank of sight words that assist in reading new texts effortlessly (Helman & Burns, 2008). English sight words refer to high-frequency words used in English reading materials such as those represented by Fry's 300 Instant Sight Words (Fry & Kress, 2006) or Dolch Sight Words (May, 1998; Dolch, 1936). Previous research shows that when younger English language learners master sight words learning, their reading ability may grow along with repetition, memorization skills, word recognition and spelling skills (Snow, Burns, & Griffin, 1998; Maki, Voeten, Vauras, & Poskiparta, 2001; Sanchez, Magnan, & Ecalte, 2012) and more advanced reading skills (Ehri, 1995; Freebody & Byrne, 1998; Hong & Chen, 2011). Therefore, English sight words play a pivotal role in developing reading abilities.

2. Sight words learning

Despite the importance of English sight words in developing English abilities, most research regarding English sight words learning has focused on particular samples, such as students with learning disabilities, special education in language learning, or remedial levels in language reading classes (Erbey, McLaughlin, Derby, & Everson, 2011; Browder & Xin, 1998; Mercer & Mercer, 2005; Alberto, Waugh, Fredrick, & Davis, 2013; Tzeng, Chen, & Chen, 2013). Moreover, most research regarding English sight words focuses on the literacy development of native English speakers. There are relatively fewer studies focused on non-native English language learners. While research summaries show that English language learners acquire reading skills in a similar manner to native speakers (August & Shanhan, 2006), there are also several factors influencing their learning of second language, such as phonological awareness, morphological structure and phonics of different languages (Lau & Chan, 2003; McBride-Change, Cho, Liu, Wanger, Shu, Zhou, Cheuk, & Muse, 2005; Chiappe & Siegel, 2006; Kahn-Horwitz, Sparks, & Goldstein, 2012). These differences may influence English sight words learning of non-native English language learners, showing the importance of addressing English language learners from different countries.

Recently, the increasing diversity in the classroom makes it even more challenging for educators to cater to students of different learning styles. Consequently, the teaching approach of differentiated instruction has received more and more attention in both

practice and academic field. In English sight words learning, it is also vital to examine the critical factors that distinguish superior sight words learners from those who are inferior. As previous research showed, English language learners with high language abilities differed from those with low abilities in several domains, such as instinct motivation (Logan, Medford, & Hughes, 2011), learning strategies applied (Purpura, 1997; Purpura, 1998; Lu & Liu, 2011) and reading strategies used (Zare-ee, 2007). These critical factors can possibly lead to differences in English language learners' performance in English. However, studies that focus particularly on the critical factors of English sight words learning are still lacking. In this study, we focus on non-native English language learners in Taiwan and aim to examine the critical factors distinguishing superior sight words learners from those who are inferior.

2.1 Important factors that affect sight word learning

A large volume of research shows greater interest in the importance of spelling ability, word recognition and literal comprehension skills and how they may affect English language learners and growth in reading abilities (Anderson, Heibert, Scott, & Wilkinson, 1985; Aaron, Joshi, Mahboobeh, Ellsberry, Henderson, & Lindsey, 1999; Stanovich, 2000; Oakhill & Cain, 2007; Snowling, Cain, Nation, & Oakhill, 2009). Based on the simple view of reading (Gough & Tunmer, 1986), it is certain that with accurate language comprehension and better word recognition skills, a student is able to read unfamiliar words and understand what they have read from context. Snowling et al. (2009) found that both word recognition skill and language comprehension processes accounted for significant and independent variance in reading comprehension performance, suggesting that both contributors are important. There were also studies noting that word recognition skill was highly associated with reading fluency; these concluded that better comprehension with English sight words can be beneficial to reading speed (Schwanenflugel, Meisinger, Wisenbaker, Kuhn, Strauss, & Morris, 2006), which further supports the importance of word recognition skills in developing reading ability. Along with word recognition skills, spelling ability was also considered the foundation of literacy development (Kahn-Horwitz, Sparks, & Goldstein, 2012). Yeung, Siegel, and Chan (2013) reported that children of English language learners performed better with phonological awareness instruction and significantly improved in English word reading and spelling phonological performance than the control group of students. In addition, Ehri (2014) proposed that when students are fully prepared with the ability of decoding words, they are able to memorize and differentiate English words with varied meanings, suggesting the importance of spelling abilities in learning English. All in all,

we predicted that the critical differences between superior and inferior English sight words learners lie in spelling ability, word recognition and literal comprehension skills. In other words, we predicted that superior English sight words learners will perform better with regard to spelling ability, word recognition and literal comprehension skills than inferior English sight words learners.

2.2 Merging technological-supported instruction

Many different teaching strategies in sight words learning were implemented and have been discussed in the past (Anderson, 1999; Eldredge, 2004; van Keer, 2004; Helman & Burns, 2008; Ness, 2011). According to Mosher (1928), the look and say method is a way of teaching students to connect meaning with written symbols; this method has been commonly used in language classrooms. Baker (1980) suggested that the look and say method is generally followed by four steps: revision of known words; introduction of new words by way of picture discussion; a brief whole-class revision test of new words; and individual or small group follow-up activities. Cunningham (2000) noted that flashcards, worksheets, writing words in sentences and word walls effectively focus students' attention in vocabulary learning. Memorizing and reciting are alternative ways to learn English sight words; other researchers suggest that learning sight words with reading materials may enhance better comprehension and learning results (Jenkins, Stein, & Wysocki, 1984; Nagy & Scott, 2000; Nagy & Herman, 1987). Mezynski (1983) stated that when learning in a meaningful context, readers tend to learn words actively and solve problems in learning situations. It is more effective to learn words in semantic and thematic clusters; for example, several words can be learned together as follows: nose, eyes, mouth, and ear. Better vocabulary learning performance crucially counted on the higher frequency of words that learners expose while learning (McKeown, Beck, Omanson, & Pople, 1985; Beck, Perfetti, & McKeown, 1982; Johnston, 2000). Literature has stated that instructional technology is more than beneficial in learning; it provides sufficient time for teachers to prepare for the class and gives students enjoyable time to perform exercises at their own learning speed (Paris & Paris, 2001; Zimmerman & Tsikalas, 2005). Prior research suggests that instructional technology provides a scaffolding for a learning environment, promotes better self-learning abilities and leads students to become self-regulated learners (Liu, Navarrete, & Wivagg, 2014). Tan and Liu (2013) suggested that K4 students (N=52) applied E-workbook in learning science performed better than students using hard copies of science textbook; targeted students also provided positive attitude and feedback in E-learning. A meta analysis conducted by Liao and Xie (2014) concluded that implementing E-learning in remedial learning



sufficiently improved students' academic performance and it has shown medium effect size in the study. Sufficient use of instructional technology positively promotes a higher level of reading comprehension in many aspects, such as letter and phonics practice, word recognition exercises, reading and grammar activities (Cobb, 1999; Garcia & Arias, 2000; Lan, 2013; Lysenko & Abrami, 2014). It also increases learners' learning experience, and most importantly, it serves as an influential strategy in English language learning for non-English language learners (Agbatogun, 2014). Lan (2013) reported that with the use of Mywordtools software, students in K6 performed significantly better in strategy use and learned more in English vocabulary learning. In this study, we consider applying the look and say method with the use of instructional technology to contribute to the best learning outcome. Therefore, the Sight Words Buddy Learning System (SWBLS) is implemented to examine a group of K5 students in spelling, word recognition, and literal comprehension skills.

2.3 The present study

There are many potential factors that affect English sight words learning for English language learners. This study focused on a group of K5 students in one of the elementary schools in New Taipei City, Taiwan, and SWBLS was implemented as an in-class and off-class learning tool. The performances among superior and inferior learners' results were compared; several variables such as spelling, word recognition, and literal comprehension skills were examined to evaluate its correlated levels. Then, with the hierarchical regression analyses, this study further investigated significant variables that might influence superior or inferior learners in learning English sight words. Finally, valuable research results toward different levels of sight words learning were revealed.

3. Methods

3.1 Participants

A total of 96 (40 male, 56 female) K5 non-English speaking students from 3 classes participated in this study; they were from one of public elementary schools located in New Taipei City, Taiwan. Students were recruited voluntarily and granted permission from the principal and home class teachers. Fifty-three children were identified as superior learners (N = 26, 8 male and 18 female) or inferior learners (N = 27, 11 male and 16 female) literacy performers of English language learners.

3.2 Materials

3.2.1 Dolch Words

English sight words refer to high frequency words, and 50% of those words are contained in reading (Fry & Kress, 2006). According to May (1998), we use 500 thousand words for verbal communication. However, in written form, we use only 0.02% of those words, and these are mostly sight words. Dolch Words is the commonly recognized and used sight words chart; it is classified into five levels: Pre-primer, Primer, First Grade, Second Grade, and Third Grade. Each level does not represent a difficulty level sequence; however, it refers to frequency levels. Those in the first level are the most highly frequented words, and vice versa. It is suggested to learn pre-primer level words before the Primer level so that learners can gain better comprehension while reading. Sight words included in the Dolch Words Chart are essential components of becoming a competent reader. These 220 words are commonly used in daily life, traffic signs, and reading and therefore have a significant influence in English language learning.

3.2.2 Spelling test, Word recognition test, and Literal comprehension test

The spelling test contains 20 words arbitrarily selected from the Dolch Sight Words Chart; the total score was 100 points. Students were required to listen and spell out English words in the blank. The contents of the test are based on the Dolch Words (Johnson & Barrett, 1971). The second part contains 50 English words. Each English word was listed on the paper, and students were required to listen and number the correct word according to the order in which it was spoken by the teacher. The total score was 100 points. The final part is a literal comprehension test that contains 30 English words. Both English words and the Chinese definition were provided; students were required to read each English word and match it with the correct Chinese definition. The total score was 100 points; each incorrect answer deducted 3 points. These three tests reached high internal consistency and a reliability of .70.

3.2.3 Sight Words Buddy Learning System (SWBLS)

This study used SWBLS as a medium for students to reflect their individual learning progress and implemented the four steps of the look and say method (Baker, 1980) so that students would be able to learn based on class materials and individual learning speed. Learning content in the SWBLS followed the four steps of the look and say method by Baker (1980): revision of known words, introduction of new words by way of picture discussion, a brief whole-class revision test of new words, and individual or small group follow-up activities. Learners accessed each task from the easiest to the most challenging; SWBLS records each individual learner's progress so that the

same learner builds upon previous learning results and takes on more challenges and difficult tasks. When students first access SWBLS, they need to apply for an ID. The class teacher will approve of each ID so that individual students will be able to access SWBLS. Basically, when students enter the online learning front page, they will receive a short message from the class teacher and then can follow instructions from each learning task accordingly. Once they have decided on a particular lesson they would like to take, they follow the three steps shown in Figures 4, 5 and 6. Firstly, students listen to 36 to 40 sight words to learn the day’s materials and practice pronunciation at their own learning pace. This step is fundamental for each student to be able to cope with different tasks that use English sight words from the day’s materials. Secondly, students open the “Sight Words Buddy” to practice word recognition skills; they listen to at least 100 sight words and differentiate each word accordingly. Students can control their learning pace; if they want to listen to a particular word more than once, they can use the repeat function. Lastly, when students complete each task, they have to report grades in the system. The procedures of the SWBLS are shown below:

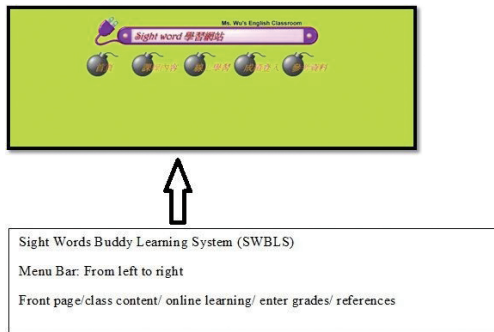


Figure 1. SWBLS front page

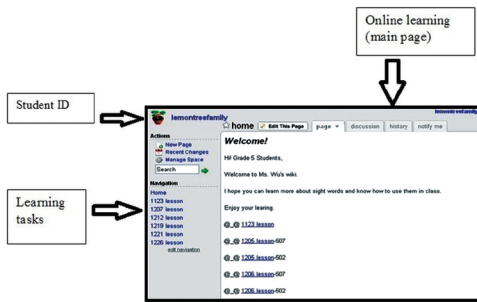


Figure 2. Online learning page (in English)



Learning task and instruction (main page)
Three steps of instruction and links to the day materials

Figure 3. Learning task and instruction page (in English)

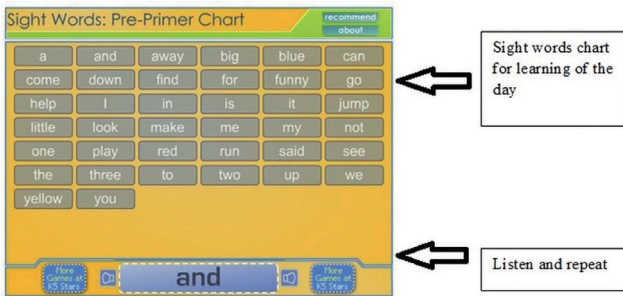


Figure 4. Practice sight words for learning the day's materials

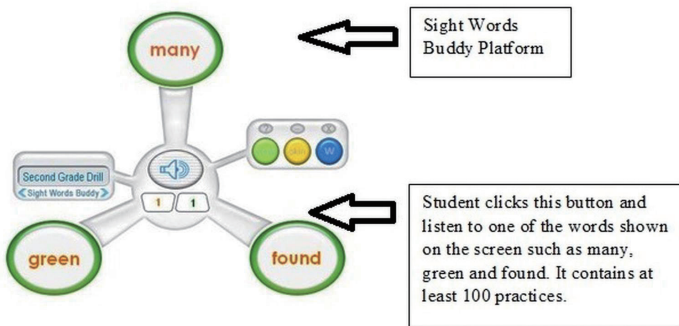


Figure 5. Sight Words Buddy Platform

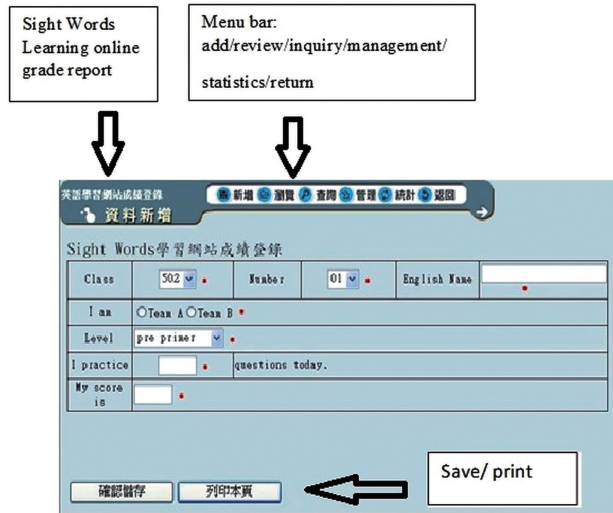


Figure 6. Self-report grade page

SWBLS can sufficiently satisfy students' learning needs, which means that SWBLS provides superior learners with more advanced tasks and inferior learners with an easier level of tasks. Each task has a different assignment; for example, students practice listening to the words from SWBLS and then match the vocabulary they have heard from a song. Lyrics are shown on the screen (figure 7), and they must identify sight words from the lyrics. Another advanced example (shown in figure 8) is that students listen to a different English song and then fill in the blanks. This requires spelling skills and depends on the student's previous learning progress. When students completed easier tasks, they may choose advanced tasks. Another example is that a student reads a story on the screen and then properly identifies sight words they have read from the story (figure 9). This example also extends several other practices for students so that students are able to apply English sight words they have learned from performing several different tasks. An additional advanced example is shown in Figure 10; through this task, students combine mixed skills such as spelling, word recognition and literal comprehension skills, at the same time. They must identify and match English sight words with correct Chinese definitions. From this task, they can also learn example sentences comprehensively.

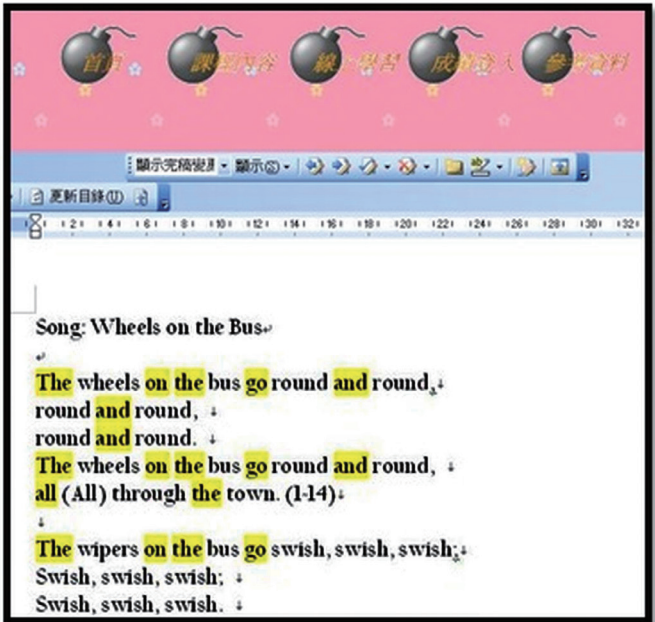


Figure 7. Listen to a song and ticks sight words

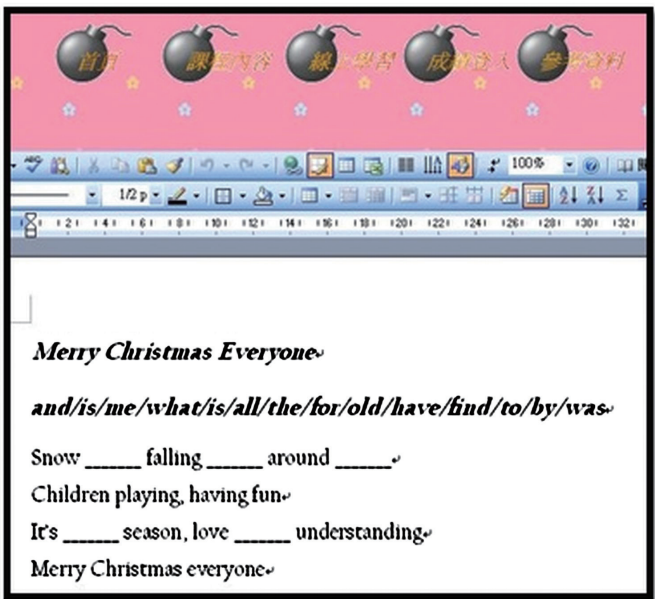


Figure 8. Fill sight words into the lyrics

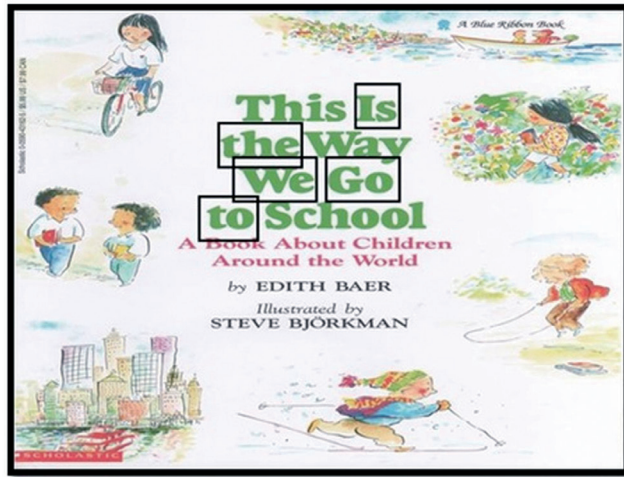


Figure 9. Story reading task with English sight words practices

Sight Words: Pre-Primer Chart					
a	and	away	big	blue	can
come	down	find	for	funny	go
help	I	in	is	it	jump
little	look	make	me	my	not
one	play	red	run	said	see
the	three	to	two	up	we
yellow	you				

一個 a banana	和 you and me	離開 go away	大的 This is a big apple	藍色的 blue sky	能夠 I can swim
來 Come here	下 Sit down	找 I find you	給 This is for my teacher	有趣的 You funny guys	去 go home
幫助 Help me	我 I am tall	在...裡面 The cat is in the box	是 He is a little boy	它 It is a pen	跳 I can jump

Figure 10. Advanced learning task with literal comprehension training

3.2.4 SWBLS Satisfactory Survey

A survey of 10 questions was conducted to understand students' learning efficiency, learning interest and satisfaction using SWBLS. Participants filled in the SWBLS Satisfactory Survey at the end of the courses. They were instructed to evaluate each item on the SWBLS Satisfactory Survey on a 5-point scale (1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree). Survey items were examined and reviewed by three English teachers in one of the elementary schools in New Taipei

City, and the survey items were modified accordingly. All items reached a reasonable level of expert validity. For the reliability level, the survey items reached high internal consistency and the reliability of .890.

3.3 Procedure

Participants (N = 96) implemented the look and say method in reading instruction and applied SWBLS in computer classrooms for 16 classes over an 8-week duration. Each class aimed to teach 39 to 46 English sight words with the use of flash cards, content from SWBLS and practice. Students are allowed to access SWBLS in class and after class; SWBLS recorded students' learning results and provided different learning tasks from easiest to most difficult according to varied English sight words learning levels. Then, all participants completed a spelling test, word recognition test, and literal comprehension test in computer classrooms; three assessments were carried out at the end of the course during the fall semester of the school year. The tests took approximately one class session lasting 40 minutes.

The spelling test, word recognition test, and literal comprehension test were first tested with a group of K5 students (N = 23, 12 boys and 11 girls) in one of the public elementary schools in New Taipei City. The spelling test was given first; the researcher repeated each vocabulary word 3 times and provided an example sentence for students to spell out correct words. For example, for the word "only", the example sentence was "I am the ONLY child in my family". As another example, for the word "four", the example sentence was "Number FOUR means bad luck in the Chinese culture". The second test proceeded similarly; however, students were required to identify words and to mark numbers in order. Fifty words were printed on the test paper and were separated into 5 columns. While the researcher repeated each English word 3 times, students were required to identify the correct word on the paper and mark the number accordingly. When students finished marking the first column, the second column would proceed. The last part was a literal comprehension test and was carried out by the students themselves. English words and their Chinese definitions were both printed on the paper. Students were required to match 30 English words with the correct Chinese definitions; meanwhile, two extra Chinese definitions were provided. Finally, the SWBLS Satisfactory Survey was given to all participants at the end of the semester.

4. Results

T-test statistics were used to analyze whether differences existed between vari-

ables among superior and inferior learners. Later, correlations were carried out to further examine the relationship between variables and to determine significant variances that might affect superior and inferior learners in learning English sight words. Lastly, several hierarchical regression analyses were implemented to evaluate differences existing among all learners, both superior and inferior. Furthermore, a satisfactory survey was conducted to review feedback and to prove whether the system reflected positive teaching results.

4.1 Descriptive statistics of variables on superior and inferior learners

To test our prediction, several t-tests were carried out, and the results are presented in table 1. Consistent with our prediction, our results showed that there was a significant difference between the spelling score of superior learners ($M = 89.91, SD = 10.34$) and those of inferior learners ($M = 15.74, SD = 15.30$) ($t(51) = 20.60, p < .001, d = 5.66$). There was also a significant difference between the word recognition score of superior learners ($M = 97.38, SD = 2.31$) and those of inferior learners ($M = 58.07, SD = 26.15$) ($t(51) = 7.63, p < .001, d = 2.10$). A significant difference was still found between the literal comprehension abilities of superior learners ($M = 86.34, SD = 10.60$) and those of inferior learners ($M = 14.59, SD = 12.76$) ($t(51) = 22.23, p < .001, d = 6.11$).

Table 1. Descriptive Statistics and t-test results

Variable	superior learners		inferior learners		$t(51)$	p -value	d
	(n=26)		(n=27)				
	M	SD	M	SD			
spelling	89.81	10.34	15.74	15.30	20.60***	.00***	5.66
word recognition	97.38	2.31	58.07	26.15	7.63***	.00***	2.10
literal comprehension abilities	86.34	10.60	14.59	12.76	22.23***	.00***	6.11

* $p < .05$, ** $p < .01$, *** $p < .001$

4.2 Correlations between variables on superior learners and inferior learners

Correlations were carried out to examine the strength of associations between variables. The results of superior learners were presented in the upper half of Table 2. Among the variables of superior learners, spelling score was found to positively relate to literacy ability ($r = .69, p < .01$). Word recognition score was negatively related to literal comprehension abilities ($r = -.44, p < .05$). The results of inferior learners are presented in the lower half of Table 2. Among these variables, literacy ability was found to positively relate to spelling score ($r = .65, p < .01$), word recognition score ($r = .80, p < .01$) and literal comprehension abilities ($r = .52, p < .01$).

Table 2. Correlation results among variables

	1	2	3	4
1. literacy ability	—	.69**	.03	.22
2. spelling	.65**	—	.23	.35
3. word recognition	.80**	.54**	—	-.44*
4. literal comprehension abilities	.52**	.63**	.54**	—

Note: Correlations for superior learners are shown above the diagonal; correlations for inferior learners are shown below the diagonal.

* $p < .05$, ** $p < .01$, *** $p < .001$

4.3 Hierarchical regression analysis of all participant's English sight words learning performance

Table 3 shows the results of a hierarchical regression analysis of all of the English language learners who participated in the current study. Both spelling score ($\beta = .53$, $p < .01$) and word recognition score ($\beta = .46$, $p < .01$) were found to be positively related to literacy ability.

Table 3. Hierarchical regression analyses predicting variables in all participants

(N = 96)					
Steps and variable	R^2	ΔR^2	β	T	p
Step1	.78	.78***			
Spelling			.88***	18.29	.00***
Step2	.87	.09***			
Spelling			.52***	8.73	.00***
Word recognition			.46***	7.72	.00***
Step3	.87	.00			
Spelling			.53***	5.91	.00***
Word recognition			.46***	7.68	.00***
Literal comprehension			.00	-.08	.94

* $p < .05$, ** $p < .01$, *** $p < .001$

4.4 Hierarchical regression analysis of superior and inferior learners' English sight words learning performance

To further examine the difference between superior and inferior learners, a hierarchical regression analysis was conducted to investigate the relationship between variables; the results are shown in Table 4 and Table 5, respectively. Among superior learners, only spelling score was found to be positively related to literacy ability ($\beta = .80$, $p < .01$). Among inferior learners, only word recognition score was found to be positively related to literacy ability ($\beta = .64$, $p < .01$).

Table 4. Hierarchical regression analyses predicting variables in superior learners

Steps and variable	R^2	ΔR^2	β	T	p
Step1	.48	.48**			
Spelling			.69***	4.77	.00***
Step2	.50	.02			
Spelling			.72***	4.73	.00***
Word recognition			-.13	-.86	.40
Step3	.51	.02			
Spelling			.80***	4.50	.00***
Word recognition			-.22	-1.19	.25
Literal comprehension			-.16	-.85	.41

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 5. Hierarchical regression analyses predicting variables in inferior learners

Steps and variable	R^2	ΔR^2	β	T	p
Step1	.42	.42**			
Spelling			.65***	4.23	.00***
Step2	.70	.28			
Spelling			.30*	2.28	.03*
Word recognition			.63***	4.76	.00***
Step3	.70	.00			
Spelling			.31	2.00	.06
Word recognition			.64***	4.48	.00***
Literal comprehension			-.02	-.10	.92

* $p < .05$, ** $p < .01$, *** $p < .001$

4.5 SWBLS Satisfactory Survey

The SWBLS Satisfactory Survey contains three parts: learning efficiency, learning interest and function of the SWBLS. In the first part, learning efficiency, 94% of the participants agreed (include those who strongly agreed) that after using SWBLS, they felt they could perform better to differentiate vocabulary by hearing it. More than half of the participants agreed that they can perform better in spelling after using the SWBLS; in addition, they also agreed that they can perform better in translating English words into Chinese with the assistance of SWBLS. Regarding the question of whether they can better memorize vocabulary words, 41% agreed and 41% strongly agreed. It is notable that 1/5 of the students (approximately 22%) reported that they were unsure whether using SWBLS improved their spelling ability; a reasonable suspicion was that spelling ability might be a bit more difficult than listening to vocabulary and understanding its literal meaning. Therefore, some students might feel less confident to report

its progress.

Table 6. SWBLS Satisfactory Survey: Learning Efficiency

Survey questions <i>After using SWBLS...</i>	Strongly agreed	Agree	Neutral	Disagree	Strongly Disagree
Q1: I feel I can perform better to differentiate vocabulary by listening to its pronunciation	47%	47%	6%	0%	0%
Q2: I feel I can perform better in spelling	50%	25%	22%	3%	0%
Q3: I feel I can perform better in translating English words into Chinese	41%	38%	19%	2%	0%
Q4: I feel I can better memorize vocabulary words	41%	41%	16%	2%	0%

In the second part of the survey, learning interest perspective, more than 90% of the participants agreed and strongly agreed for these four questions. Overall, students reflected that with the use of SWBLS, the system motivated their learning effectively and positively. They generated a higher interest in learning English, they like to use SWBLS to assist them in learning and most importantly, they like using SWBLS in classes.

Table 7. SWBLS Satisfactory Survey: Learning Interest

Survey questions <i>After using SWBLS...</i>	Strongly agreed	Agree	Neutral	Disagree	Strongly Disagree
Q5: I feel I have a higher interest in learning English	78%	19%	3%	0%	0%
Q8: I like to use SWBLS to learn English vocabulary words	72%	22%	6%	0%	0%
Q9: I think the teacher should use SWBLS more often in classes	53%	44%	3%	0%	0%
Q10: I like the way of applying online SWBLS in classes	78%	19%	3%	0%	0%

Last but not the least, the majority of the participants agreed and strongly agreed that the functions and content on SWBLS are easy to use and comprehensive. Only 13% were not sure or disagreed on the functions of the SWBLS; this may indicate that a small amount of students might be unfamiliar with the computer functions of the system and might need more practice on the tasks. In short, with the implementation of SWBLS, students felt much more positive in vocabulary learning and built a higher confidence in reporting their own learning progress with a high learning efficiency outcome. In other words, SWBLS successfully assisted students in significantly building

spelling, word recognition and literal comprehension skills. All in all, the survey results confirmed that technology implementation significantly improved students' English learning in learning efficiency, learning interest and satisfaction with SWBLS.

Table 8. SWBLS Satisfactory Survey: The functions of SWBLS

Survey questions <i>After using SWBLS...</i>	Strongly agreed	Agree	Neutral	Disagree	Strongly Disagree
Q6: I feel the functions on SWBLS are easy to use	56%	31%	7%	6%	0%
Q7: I feel the content on SWBLS is easy to understand	72%	28%	0%	0%	0%

4.6 Discussion

To become a proficient reader, it is essential for English language learners to master English sight words. While previous research about English sight words mostly focused on particular samples, the current study took non-English language learners into consideration and examined the critical factors distinguishing superior sight words learners from those who are inferior. Our study found that superior sight words learners were significantly different from those who were inferior in spelling, word recognition, and literal comprehension abilities. For superior sight words learners, spelling is the best predictor for sight words ability. For inferior sight words learners, word recognition is the best predictor for sight words ability.

Consistent with our prediction, our research findings suggest that spelling, word recognition, and literal comprehension abilities are important components not only in learning English but also in learning English sight words. As a result, these critical factors that the current research proposes can be applied as valid indicators of English sight words ability. Teachers can also understand their students' sight words learning via such factors. Moreover, our research also shows that factors restricting children's sight words learning are not identical for superior and inferior sight words learners. As prior research found that English learning of superior and inferior learners may differ in some domains such as motivation (Logan et al., 2011) and learning strategy (Purpura, 1997; Purpura, 1998), our research further suggests that English learners with different abilities also differ in their pattern of learning. The results show that spelling is the best predictor for sight words ability for superior sight words learners, whereas word recognition is the best predictor for inferior sight words learners. This finding is consistent with the language-learning process of orthographic mapping (OM), which explains how children learn to read words by sight, to spell words from memory and to acquire

vocabulary words from print (Ehri, 1995; Ehri, 2005; Ehri, 2014). According to the four phases of development proposed by Ehri (2005), the development of reading ability begins in the prealphabetic phase, during which sight words are learned by remembering salient visual cues and during which children possess no decoding ability. As they reach the final phase, the consolidated alphabetic phase, their ability to decode new words matures and their sight words learning is based on primarily on grapho-syllabic connections. Students in this phase are able to apply grapho-syllabic spelling units such as spellings of syllables, and spellings of morphemes, which is a vital contributor to spelling ability. These characteristics of different phases can explain our results in that superior learners corresponded to the consolidated alphabetic phase and inferior learners corresponded to the prealphabetic phase. Our findings provided an empirical base for teachers who try to establish an English sight words learning program for English language learners and are a reminder of the importance of designing flexible programs that are compatible with every type of child.

From the results of the SWBLS Satisfactory Survey, students reported a high satisfaction level in the overall aspects of learning efficiency, learning interest and functions of the software. However, approximately 22% of the participants reported that they were not sure whether using SWBLS improved their spelling ability or not. This might because spelling ability was seen as a more challenging ability than listening or oral ability. Therefore, students might feel less confident to report its progress. Another perspective was that a few of participants reported that they were unsure or disagree the functions of the SWBLS was easy to use; a reasonable explanation might be targeted on more training or practice with those English tasks among students.

5. Results

The purpose of this study was to evaluate SWBLS for a group of K5 students in spelling, word recognition, and literal comprehension skills. In this study, several important findings have been concluded. We found that superior learners were significantly different from those who are inferior in spelling, word recognition, and literal comprehension abilities. For superior learners, spelling is the best predictor for sight words ability, while for inferior sight words learners, word recognition is the best predictor for sight words ability. Among all of the K5 English language learners participating, both spelling and word recognition abilities were found to be positively related to literacy ability. In addition, through SWBLS implementation, the results echoed with the literature in general. Students tend to be fond of using SWBLS and would like to have more

opportunities in using it in classes. Future research might include samples with more diversity to examine the learning of English sight words in a different context. The current research is a cross-sectional design with all data self-reported. A longitudinal study might be conducted in the future to reduce the effect of common method variance.

References

- Tan, H. T., & Liu, Y. C. (2013). The Effect of Using E-workbook in Subject Learning. *Educational Technology and Learning, 1* (1), 13-28.
- Liao, Y. G., & Xie, C. F. (2014). A Meta Analysis of the Effect of Applying Digital Picture in Remedial Teaching. *Educational Technology and Learning, 2* (1), 101-128.
- Aaron, P. G., Joshi, R. M., Mahboobeh A., Ellsberry, A., Henderson, J., & Lindsey, K. (1999). Decoding and sight-word naming: Are they independent components of word recognition skill? *Reading and Writing: An Interdisciplinary Journal, 11*, 89-127.
- Agbatogun, A. O. (2014). Developing Learners' Second Language Communicative Competence through Active Learning: Clickers or Communicative Approach? *Educational Technology & Society, 17*(2), 257-269.
- Alberto, P. A., Waugh, R. E., Fredrick, L. D., & Davis, D. H. (2013). Sight Word Literacy: A functional-based approach for identification and comprehension of individual words and connected text. *Education and Training in Autism and Developmental Disabilities, 48*(3), 332-350.
- Anderson, N. (1999). *Exploring Second Language Reading*. Boston, MA: Heinle & Heinle Publishers.
- Anderson, R., Heiber, E., Scott, J., & Wilkinson, I. (1985). *Becoming a Nation of Readers: The Report of the Commission on Reading*. Washington, DC: National Inst. Of Education.
- August, D., & Shanahan, T. (2006). *Developing Literacy in Second-Language Learners: Report of the National Literacy Panel on Language-Minority Children and Youth*. London: Laurence Erlbaum Association.
- Baker G. (1980) Learning to Read: children's responses to the 'look and say' method. *Educational Review, 32*(2), 133-150, DOI: 10.1080/0013191800320203.
- Beck, I. L., Perfetti, C.A., & McKeown, M.G. (1982). Effects of long-term vocabulary instruction on lexical access and reading comprehension. *Journal of Educational Psychology, 74*, 506-521.
- Browder, D. M., & Xin, Y. P. (1998). A Meta-analysis and review of sight words research and its implications for teaching functional reading to individuals with moder-



- ate and severe disabilities. *The Journal of Special Education*, 32(3), 130-153.
- Chiappe, P., & Siegel, L. S. (2006). A longitudinal study of reading development of Canadian children from diverse linguistic backgrounds. *The Elementary School Journal*, 107(2), 135-152.
- Cobb, P. (1999). Supporting the improvement of learning and teaching in social and institutional context. In S. M. Carver, & D. Klaher, (Eds.), *Cognition and Instruction: Twenty-five Years of Progress* (pp. 455-478). Mahwah, NJ: Lawrence Erlbaum Association.
- Cunningham, P. M. (2000). *Phonics They Use: Words for Reading and Writing* (3rd ed.). NY: Longman.
- Dolch, E. W. (1936). A basic sight vocabulary. *Elementary School Journal*, 36, 456-460.
- Ehri, L. (2005). "Development of sight word reading: Phases and findings" . In M. Snowling, & C. Hulme, (Eds.), *The science of reading: A handbook* (pp. 135-154). Malden, MA: Blackwell.
- Ehri, L. C. (1995). Phases of development learning to read words by sight. *Journal of Research in Reading*, 18(2), 116-125. Doi:10.1111/j.1467-9817.1995.tb00077.x
- Ehri, L. C. (2014). Orthographic Mapping in the Acquisition of Sight Word Reading, Spelling Memory, and Vocabulary Learning. *Scientific Studies of Reading*, 18, 5-21.
- Eldredge, J. L. (2004). *Teach Decoding: Why and How*. Upper saddle river, NY: Pearson Education.
- Erbey, R., McLaughlin, T. F., Derby, K. M., & Everson, M. (2011). The effects of using flashcards with reading racetrack to teach letter sounds, sight words, and math facts to elementary students with learning disabilities. *International Electronic Journal of Elementary Education*, 3(3), 213-226.
- Freebody, P., & Byrne, B. (1988). Word-Reading Strategies in Elementary School Children: Relations to Comprehension, Reading Time, and Phonemic Awareness. *Reading Research Quarterly*, 23(4), 441-453.
- Fry, E. B., & Kress, J. E. (2006). *The reading teacher's book of lists* (5th ed.). San Francisco: Jossey-Bass.
- Garcia, M.R., & Arias F.V. (2000). A comparative study in motivation and learning through print-oriented and computer-oriented tests. *Computer Assisted Language Learning*, 13(4-5), 457-465.
- Gough, P. B., & Tunmer, W. E. (1986). Decoding, reading, and reading disability. *Remedial and Special Education*, 7, 6-10.
- Helman, L. A., & Burns, M. K. (2008). What does oral language have to do with it? Helping young English-language learners acquire a sight word vocabulary. *The Read-*



- ing Teacher*, 62(1), 14-19.
- Hong, S. C., & Chen, S. H. (2011). Roles of position, stress, and proficiency in L2 children's spelling: A developmental perspective. *Reading and Writing*, 24, 355-385.
- Jenkins, J. R., Stein, M. L., & Wysocki, K. (1984). Learning vocabulary through reading. *American Educational Research Journal*, 21, 767-787.
- Johnson, D. D., & Barrett, T. C. (1971). Johnson's basic vocabulary for beginning reading and current basal readers: are they compatible? *Journal of Reading Behavior*, 4(4), 1-11.
- Johnston, F. R. (2000). Word learning in predictable text. *Journal of Educational Psychology*, 92(2), 248-255.
- Kahn-Horwitz, J., Sparks, R. L., & Goldstein, Z. (2012). English as a foreign language spelling development: A longitudinal study. *Applied Psycholinguistics*, 33(2), 343-363.
- Lan, Y. J. (2013). The Effect of Technology-Supported Co-Sharing on L2 Vocabulary Strategy Development. *Educational Technology & Society*, 16(4), 1-16.
- Lau, K., & Chan, D. W. (2003). Reading strategy use and motivation among Chinese good and poor readers in Hong Kong. *Journal of Research in Reading*, 26(2), 177-190.
- Liu, M., Navarrete, C. C., & Wivagg, J. (2014). Potentials of Mobile Technology for K-12 Education: An Investigation of iPod touch Use for English Language Learners in the United States. *Educational Technology & Society*, 17(2), 115-126.
- Logan, S., Medford, E., & Hughes, N. (2011). The importance of intrinsic motivation for high and low ability readers' reading comprehension performance. *Learning and Individual Differences*, 21(1), 124-128.
- Lu, Z., & Liu, M. (2011). Foreign language anxiety and strategy use: A study with Chinese undergraduate EFL learners. *Journal of Language Teaching and Research*, 2(6), 1298-1305.
- Lysenko, L. V., & Abrami, P. C. (2014). Promoting reading comprehension with the use of Technology. *Computers and Education*, 75, 162-172.
- Maki, H. S., Voeten, M. J. M., Vauras, M. M. S., & Poskiparta, E. H. (2001). Predicting writing skill development with word recognition and preschool readiness skills. *Reading and Writing: An Interdisciplinary Journal*, 14, 643-672.
- May, F. (1998). *Reading as communication: To help children write and read*. Upper Saddle River, NJ: Merrill.
- McBride-Chang, C., Cho, J. R., Liu, H., Wagner, R. K., Shu, H., Zhou, A., Cheuk, C. S-M., & Muse, A. (2005). Changing models across cultures: Associations of phonological awareness and morphological structure awareness with vocabulary and word recognition in second graders from Beijing, Hong Kong, Korea, and the United



- States. *Journal of experimental child psychology*, 92(2), 140-160.
- McKeown, M. G., Beck, I. L., Omanson, R. C., & Pople, M. T. (1985). Some effects of the nature and frequency of vocabulary instruction on the knowledge and use of words. *Reading Research Quarterly*, 20, 522-535.
- Mercer, C. D., & Mercer, A. R. (2005). *Teaching students with learning problems*. Upper Saddle River, NJ: Merrill Prentice Hall.
- Mezynski, K. (1983). Issues concerning the acquisition of knowledge: Effects of vocabulary training and reading comprehension. *Review of Educational Research*, 53, 263-279.
- Mosher, R. M. (1928). Some results of teaching beginners by the look-and-say method. *Journal of Educational Psychology*, 19(3), 185-193.
- Nagy, W. E. & Scott, J. A. (2000). Vocabulary Processes. In M.L. Kamil, P. Mosenthal, P.D. Pearson, & R. Barr (Eds.) *Handbook of reading research* (pp. 269- 284). Mahwah, NJ: Laurence Erlbaum Association.
- Nagy, W. E., & Herman, P. A. (1987). Learning word meanings from context during normal reading. *American Educational Research Journal*, 24, 237-270.
- Ness, M. (2011). Explicit reading comprehension instruction in elementary classrooms: teacher use of reading comprehension strategies. *Journal of Research in Childhood Education*, 25(1), 1-20.
- Oakhill, J., & Cain, K. (2007). Issues of Causality in Children's Reading Comprehension. In McNamara D. S. (Ed.), *Reading Comprehension Strategies: Theories, Interventions and Technologies* (pp. 47-71). New York, NY: Laurence Erlbaum Association.
- Paris, S. G., & Paris, A. H. (2001). Classroom applications of research on self-regulated learning. *Educational Psychologist*, 36(2), 89-101.
- Purpura, J. E. (1997). An analysis of the relationships between test takers' cognitive and metacognitive strategy use and second language test performance. *Language Learning*, 47(2), 289-325.
- Purpura, J. E. (1998). Investigating the effects of strategy use and second language test performance with high-and low-ability test takers: A structural equation modelling approach. *Language Testing*, 15(3), 333-379.
- Sanchez, M., Magnan, A., & Ecalle J. (2012). Knowledge about word structure in beginning readers: what specific links are there with word reading and spelling? *European Journal of Psychology of Education*, 27, 299-317.
- Schwanenflugel, P. J., Meisinger, E. B., Wisenbaker, J. M., Kuhn, M. R., Strauss, G. P., & Morris, R. D. (2006). *Becoming a Fluent and Automatic Reader in the Early El-*

- elementary School Years. *Reading Research Quarterly*, 41(4), 496-522.
- Snow, C. E., Burns, M. S., & Griffin, P. (Eds.). (1998). *Preventing reading difficulties in young children*. Washington, DC: National Academy Press.
- Snowling, M., Cain, K., Nation, K., & Oakhill, J. (2009). *Reading Comprehension: Nature, Assessment and Teaching*. Retrieved December 10, 2015, from <http://eprints.lancs.ac.uk/50134/1/ESRCcomprehensionbooklet.pdf>
- Stanovich, K. E. (2000). *Progress in Understanding Reading: Scientific Foundations and New Frontiers*. New York, NY: The Guilford Press.
- Tzeng, S. J., Chen, W. T., & Chen, S. L. (2013). The study of the effectiveness of the remedial teaching of English lower achievers of students through sight words learning and phonics direct method. *Curriculum and Instruction Quarterly*, 16(1), 1-34.
- Van Keer, H. (2004). Fostering reading comprehension in fifth grade by explicit instruction in reading strategies and peer tutoring. *British Journal of Educational Psychology*, 74, 37-70.
- Yeung, S. S., Siegel, L. S., & Chan, C. K. (2013). Effects of a phonological awareness program on English reading and spelling among Hong Kong Chinese ESL children. *Reading and Writing*, 26, 681-704.
- Zare-ee, A. (2007). The relationship between cognitive and meta-cognitive strategy use and EFL reading achievement. *Journal of Applied Psychology*, 2(5), 105-119.
- Zimmerman, B. J., & Tsikalas, K. E. (2005). Can computer-based learning environments (CBLEs) be used as self-regulatory tools to enhance learning? *Educational Psychologist*, 40(4), 267-271.





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The Effect of SWBLS-supported with Sight Words Learning

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Abstract

This study focused on English sight words learning of non-native English language learners and aimed to examine the critical factors distinguishing superior sight words learners from those who are inferior. We identified three possible critical factors to test the differences among English language learners, including spelling, word recognition, and literal comprehension abilities. A quasi-experiment was conducted that included 96 students from an elementary school in New Taipei City of Taiwan. Students were taught under the framework of the Look and Say Method and a Sight Words Buddy Learning System for 16 weeks. The results showed that superior sight words learners were significantly different from those who are inferior in spelling, word recognition, and literal comprehension abilities. For superior sight words learners, spelling is the best predictor for English reading ability, while for inferior sight words learners, the best predictor is word recognition ability. These results highlight the various factors restricting students' sight words learning and the importance of spelling and word recognition abilities as contributors to superior- and inferior-ability students' performance in English sight words learning. The findings suggest that different instructional emphasis should be made for superior- and inferior-ability students when teaching English, and better learning performance will thus be sufficiently improved.

Key words: *Spelling, word recognition, literal comprehension skill, sight words, SWBLS*



